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EXAMINER	
BRINEY III, WALTER F	

ART UNIT	PAPER NUMBER
2644	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/595,494	USUI, HISAYOSHI	
	Examiner	Art Unit	
	Walter F Briney III	2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 February 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. **Claims 1-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Fukushi (US Patent 5,793,250).**

Claim 1 is limited to *a digital portable telephone set having demodulating means for demodulating a received signal*. Fukushi discloses a phase demodulator selectively using a first or a second detector. See Abstract. As is clearly seen from figure 2, Fukushi discloses two phase-distortion calculators (17) and (26), which generate respective phase distortions (i.e. *a first and second data generating means for generating first and second quality data*). Also as seen from figure 2, the calculators are in *parallel*. Therefore, Fukushi anticipates all limitations of the claim.

Claim 2 is limited to *the digital portable telephone set according to claim 1*, as covered by Fukushi, *wherein the first quality data includes received signal frequency data*; Fukushi discloses a frequency offset (i.e. first quality data and signal frequency data) (figure 2, element f_{off}). See column 5, lines 38-49. Therefore, Fukushi anticipates all limitations of the claim.

Claim 3 is limited to *the digital portable telephone set according to claim 1*, as covered by Fukushi, *wherein the second quality data does not include the received*

signal frequency data; Fukushi discloses using the value of f_{off} (i.e. *signal frequency data*) to adjust the input to the *second detector* (26) such that the *second quality data* generated by the *second detector* does not include the *signal frequency data*. See column 5, lines 55-58 and column 6, lines 39-42. Therefore, Fukushi anticipates all limitations of the claim.

Claim 4 is limited to *the digital portable telephone set according to claim 1*, as covered by Fukushi, *wherein the second data generating means further generates received data on the basis of the received signal*; Fukushi discloses a phase discriminator (figure 2, element 31) that generates a demodulated data (i.e. received data) (column 7, lines 11-50) using the output of either the first (17) or second (26) phase distortion calculators. Therefore, Fukushi anticipates all limitations of the claim.

Claim 5 is limited to *the digital portable telephone set according to claim 1*, as covered by Fukushi, *which further comprises automatic frequency control means for automatically controlling the received signal frequency on the basis of the first quality data*; Fukushi discloses using the value of f_{off} to control an automatic frequency control (column 5, lines 50-54), which controls received signal frequency. Therefore, Fukushi discloses all limitations of the claim.

Claim 6 is limited to *a digital portable telephone set having demodulating means for demodulating a received signal, wherein: the demodulating means includes data reproducing means, the data reproducing means having first data generating means for generating first quality data on the basis of the received signal*; Fukushi discloses a differential detector (figure 2, element 17) that generates a difference between symbols

that include phase information (i.e. first quality data) (column 5, lines 29-44). *Second data generating means for generating second quality data different from the first quality data on the basis of the received signal*; Fukushi discloses a second differential detector (figure 2, element 26) that generates a difference between symbols that include phase information (i.e. *second quality data*) (column 6, lines 44-50). As is clear from figure 2, the first (17) and second (26) detectors are in *parallel with each other*. *The second data generating means including a correcting circuit for correcting the received signal frequency data*; Fukushi discloses correcting the input to the second detector by way of DPLL (22) (column 6, lines 39-43). *A decoder for generating the second quality data and the received data on the basis of new frequency data obtained in the correcting circuit*; Fukushi discloses decoding the *received data* output from the second detector (26) using phase discriminator (31) and generating *quality data* using integrator (27) (column 6, line 51 through column 7, line 10). Therefore, Fukushi anticipates all limitations of the claim.

Claim 7 is limited to *the digital portable telephone set according to claim 6*, as covered by Fukushi, *wherein the correcting circuit corrects a frequency deviation of the received signal*; Fukushi discloses a DPLL circuit (figure 2, element 22) that adjusts the phase of the received signal considering the frequency offset value f_{off} (column 6, lines 36-43). Therefore, Fukushi anticipates all limitations of the claim.

Claim 8 is limited to *the digital portable telephone set according to claim 6*, as covered by Fukushi, *wherein the second quality data is used as line control data*; Fukushi discloses using the output from integrator (27) to drive a switch that selects

between two inputs to the phase discriminator (i.e. *line control*) (column 6, line 65-column 7, line 10). Therefore, Fukushi anticipates all limitations of the claim.

Claim 9 is limited to *a digital portable telephone set having demodulating means for demodulating a received signal, wherein: the demodulating means includes data reproducing means, the data reproducing means having correcting means for correcting frequency data of the received signal*; Fukushi discloses a frequency offset circuit (figure 2, elements 18 and 36) that subtracts a frequency offset from the signal received by the antenna (figure 2, element 12). *Data generating means for generating quality data on the basis of new frequency data obtained in the correcting means*; Fukushi discloses a phase discriminator (figure 2, element 31) that generates demodulated data (i.e. received data) (column 7, lines 44-50) and an integrator (figure 2, element 19) that generates phase data (i.e. quality data) (column 5, line 61-column 6, line 7) based on the output of a subtractor (i.e. correcting circuit) (figure 2, element 36). *Corrected data obtained in the correcting means being used for received signal frequency control*; Fukushi discloses using the value of f_{off} to control an automatic frequency control (column 5, lines 50-54), which controls received signal frequency. Therefore, Fukushi discloses all limitations of the claim.

Claim 10 is limited to *the digital portable telephone set according to claim 9*, as covered by Fukushi, *wherein the quality data includes received signal frequency data*; Fukushi discloses that the output of the integrator (figure 2, element 19) contains phase distortion information (i.e. received signal frequency data). Therefore, Fukushi discloses all limitations of the claim.

Claim 11 is limited to *the digital portable telephone set according to claim 9*, as covered by Fukushi, *wherein the data generating means generates received data on the basis of the new frequency data*; Fukushi discloses a phase discriminator that produces demodulated QPSK data selected by the output of the integrator (figure 2, element 19) that produces integrated phase distortion information (i.e. new frequency data). Therefore, Fukushi discloses all limitations of the claim.

Claim 12 is limited to *the digital portable telephone set according to claim 9*, as covered by Fukushi, *which further comprises automatic frequency control means for automatically controlling the received signal frequency according to the corrected data obtained in the correcting means*; Fukushi discloses using the value of f_{off} (i.e. corrected data) to control an automatic frequency control (column 5, lines 50-54), the automatic frequency controller varies the received signal frequency. Therefore, Fukushi discloses all limitations of the claim.

Claim 13 is limited to *the digital portable telephone set according to claim 9*, as covered by Fukushi, *wherein the correcting means corrects frequency deviation of the received signal*; Fukushi discloses a frequency offset circuit (figure 2, elements 18 and 36) that operates to lower the phase distortion of the signal received by the antenna (column 7, lines 11-67). Therefore, Fukushi discloses all limitations of the claim.

Claim 14 is limited to *the digital portable telephone set according to claim 9*, as covered by Fukushi, *wherein the quality data is used as line control data*; Fukushi discloses using the integrated phase distortion information to drive a switch that selects

between two inputs to the phase discriminator (i.e. line control) (column 6, line 65-column 7, line 10). Therefore, Fukushi discloses all limitations of the claim.

Claim 15 is limited to *a digital portable telephone set including means for demodulating a received signal and reproducing data with control means for line control in the portable telephone set comprising: a phase detecting unit for providing an IF signal as phase data under control of a clock of the reference frequency at a timing of symbol clock*; Fukushi discloses an angle calculator that calculates the phase of a signal at each symbol timing (i.e. symbol clock) (column 5, lines 29-36). *A one symbol delaying unit for delaying the phase data by one*; Fukushi discloses delaying the phase with a latch (i.e. delaying unit) (figure 2, element 17a) for one time period (column 5, lines 37-44). *A first subtractor for obtaining a first difference signal between the phase data and the delayed signal by the one symbol delaying unit*; Fukushi discloses a subtractor (figure 2, element 17b). *A second subtractor for obtaining a second difference signal between the phase data and the delayed signal by the one symbol delaying unit*; Fukushi discloses a subtractor (figure 2, element 36). *On the basis of a correction signal*; Fukushi discloses using the subtractor (figure 2, element 36) with the phase data and the delayed phase data and with a frequency offset signal (figure 2, element f_{off}) (column 5, lines 45-57). *A correcting means for producing the correction signal on the basis of the first difference signal*; Fukushi discloses using a frequency offset circuit (figure 2, element 18 and 36) with an input from the differential detector (figure 2, element 17) to produce f_{off} (column 5, lines 45-57). *A first decoder for decoding the first difference signal to produce the received data and a first quality data*

of a reception line; Fukushi discloses a frequency offset circuit (figure 2, element 18) that calculates frequency offset (i.e. first quality data) (column 5, lines 45-57) and a phase discriminator (figure 2, element 31) to produce demodulated QPSK data (column 7, lines 7-10). *A second decoder for decoding the second difference signal to produce a second quality data of the reception line*; Fukushi discloses an integrator (figure 2, element 19) that has an input from the second subtractor (figure 2, element 36) to create phase distortion data (i.e. second quality data) (column 5, line 65-column 6, line 7). Therefore, Fukushi discloses all limitations of the claim.

Claim 16 is limited to *a digital portable telephone set including means for demodulating a received signal and reproducing data, comprising: a phase detecting unit for providing an IF signal from as phase data under control of a clock of the reference frequency at a timing of symbol clock*; Fukushi discloses an angle calculator that calculates the phase of a signal at each symbol timing (i.e. symbol clock) (column 5, lines 29-36). *A one symbol delaying unit for delaying the phase data by one*; Fukushi discloses delaying the phase with a latch (i.e. delaying unit) (figure 2, element 17a) for one time period (column 5, lines 37-44). *A subtractor for obtaining a difference signal between the delayed phase data obtained by one symbol delaying unit and the phase data*; Fukushi discloses a subtractor (figure 2, element 36). *On the basis of a correction signal*; Fukushi discloses using the subtractor (figure 2, element 36) with the phase data and the delayed phase data and with a frequency offset signal (figure 2, element f_{off}) (column 5, lines 45-57). *A decoder for decoding the difference signal to produce the received data and a quality data of a receipt line*; Fukushi discloses an integrator (figure

2, element 19) that calculates phase distortion data (i.e. first quality data) (column 5, lines 45-57) and a phase discriminator (figure 2, element 31) to produce demodulated QPSK data (column 7, lines 7-10). *A correcting means for producing the correction signal on the basis of the difference signal and supplying the correction signal*; Fukushi discloses using a frequency offset circuit (i.e. correcting means) (figure 2, element 18 and 36) with an input from the integrator that supplies the last symbols f_{off} in the form of f_{pre} (i.e. difference signal) signal to produce a new f_{off} (i.e. correction signal) (column 5, lines 45-57). Therefore, Fukushi discloses all limitations of the claim.

Response to Arguments

2. **Applicant's arguments filed 9 March 2004 with respect to claims 1-8 have been considered but are moot in view of the new ground(s) of rejection.**

3. **Applicant's arguments filed 9 March 2004 with respect to claims 9-14 and 16 have been fully considered but they are not persuasive.**

With respect to claim 9, the applicant alleges on pages 9 and 10 of the instant response that the integrator (19) depicted in figure 2 of Fukushi cannot be considered both a part of the correcting means and the data generating means for generating quality data; the examiner respectfully disagrees. As is clear from figure 2, the integrator includes integration calculator (19), divider (34) and a register (20) for storing the result of the integration. The averaged integration result is feedback to the frequency offset correction register (18) and fed forward to comparator (29). It clearly serves two purposes and, therefore, discloses both a correcting circuit and data generating means.

With further respect to claim 9, the applicant alleges on page 10 that because the integrator performs an addition function versus a subtraction function it does not perform the same function as the data generating means; the examiner respectfully disagrees. The subtraction function suggested by the applicant clearly corresponds to the output of subtractor (17b) of Fukushi. As the output of the subtractor (17b) feeds integrator (19), their combination clearly performs the same function, i.e. *data generating means for generating quality data entails a subtraction of the data from one symbol to the next.*

With respect to claims 10-14, the applicant has not provided any further evidence of the patentability of these claims beyond that treated with respect to claim 9 above, therefore, the rejections of claims 10-14 are maintained for the same reasons.

With respect to claims 15 and 16, the applicant alleges on pages 10 and 11 that the subtractor (36) of Fukushi does not obtain a difference signal between the phase data and the delayed signal by the one symbol-delaying unit on the basis of a correction signal; the examiner respectfully disagrees. Clearly subtractor (36) forms the difference between the difference formed already by subtractor (17b) and the frequency offset signal f_{off}. Neither claim 15 nor 16 indicate that the difference formed must be independent of a previous difference function, as such, the applicant's arguments are moot.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter F Briney III whose telephone number is 703-305-0347. The examiner can normally be reached on M-F 8am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on 703-305-4040. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SINH TRAN
SUPERVISORY PATENT EXAMINER

WFB
4/12/05